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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/554,025	06/15/2000	CHRISTOPH DORR	TRW/EHR4846	6556
26294	7590	11/03/2004	EXAMINER	
TAROLLI, SUNDHEIM, COVELL & TUMMINO L.L.P. 526 SUPERIOR AVENUE, SUITE 1111 CLEVEVLAND, OH 44114			GARCIA, ERNESTO	
			ART UNIT	PAPER NUMBER
			3679	

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/554,025	Applicant(s) DORR, CHRISTOPH 	
	Examiner Ernesto Garcia	Art Unit 3679	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11,13,14,16-18 and 22-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14,16-18 and 22-25 is/are allowed.
- 6) ☒ Claim(s) 11,13,26 and 27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11, 13, 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graham et al., 2,424,455, in view of Pazdirek et al., 5,609,433.

Regarding claim 11, Graham et al. disclose, in Figure 1, a ball-and-socket joint having a joint pin **15**, a joint housing **10**, a bearing shell **13a**, and a metal ring **12**. The joint pin **15** is provided with a joint ball **15a**. The bearing shell **13a** is inserted into the housing **10**. The bearing shell **13a** has an open end portion **13d** and a support portion **13b**. The joint pin **15** extends through the open end portion **13d**. The support portion **13b** contacts and supports the joint ball **15a**. The ring **12** has a radially outwardly angled flange **12b** embedded in the housing **10**. The ring **12** has a radially inwardly bent end segment **12d** located in an area **A15** of an opening **A5** in the housing **10**. The radially inwardly bent end segment **12d** abuts the open end portion **13d** of the bearing shell **13a** and secures the bearing shell **13a** within the housing **10**. An inside diameter **A32** of a cylindrical center part **12a** of the ring **12** corresponds to an outside diameter

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A33 of the bearing shell **13a**. The bearing shell **13a** is for a rotatable-and-tiltable support of the joint ball **15a**. The ring **12** is for positively locking the bearing shell **13a** within the housing **10**. The area **A15** of the opening **A5** is provided for passage of the joint pin **15**.

However, Graham et al. fails to disclose the housing **10** being made of plastic and the bearing shell **13a** being a one-piece member. Pazdirek et al. teach, in Figure 2, a ball-and-socket joint having a joint housing **12** made of plastic, thus a plastic joint housing, and a bearing shell **36** being a one-piece member. The housing is made of plastic to make the joint by making the housing insert molded around the bearing shell and the joint pin and to make the joint light weight (col. 4, lines 44-46). Pazdirek et al. does not explain the reason for making the bearing shell as a one-piece member. However, it appears that making the bearing into a one-piece is part of a design choice for snapping the ball into the bearing shell instead of a two-piece part. Therefore, as taught by Pazdirek et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the housing from plastic to make the joint light weight and make the bearing shell into a one-piece member to allow the ball of a joint pin to snap in place.

Regarding claim 13, the flange **12b** protrudes at an approximately 90 degree angle from the cylindrical center part **12a** of the ring **12**.

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Regarding claim 26, as modified above, the ring **12** protrudes outwardly of the housing **10** such that the radially inwardly bent end segment **12d** is spaced away from the housing **10** in the area **A15** of the opening **A5** of the housing **10**. The open end portion **13d** of the bearing shell **13a** also protruding outwardly of the housing **10** and being secured relative to the housing **10** by the radially inwardly bent end segment **12d**.

Regarding claim 27, Graham et al. discloses, in Figure 1, a ball-and-socket joint comprising a joint pin **15**, a joint housing **10**, a bearing shell **13a** and a metal ring **12**. The joint pin **15** is provided with a joint ball **15a**. The bearing shell **13a** is inserted into the housing **10**. The ring **12** has a radially outwardly angled flange **12b** embedded in the housing **10**. The ring **12** has a radially inwardly bent end segment **12d** located in an area **A15** of an opening **A5** in the housing **10**. The radially inwardly bent end segment **12d** secures a position of bearing shell **13a** within the housing **10**. An inside diameter **A32** of a cylindrical center part **12a** of a ring **12** corresponds to an outside diameter **A33** of the bearing shell **13a**. However, the joint housing **10** is not made of plastic. Pazdirek et al. teach, in Figure 2, a ball-and-socket joint having a joint housing **12** made of plastic, thus a plastic joint housing to make the joint by making the housing insert molded around the bearing shell and the joint pin, and to make the joint light weight (col. 4, lines 44-46).

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The bearing shell **13a** is for a rotatable-and-tiltable support of the joint ball **15a**.

The ring **12** is for positively locking the bearing shell **13a** within the housing **10**. The area **A15** of the opening **A5** is provided for passage of the joint pin **15**.

Allowable Subject Matter

Claims 14, 16-18 and 22-25 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

regarding claims 14 and 22, the prior art of record does not disclose or suggest a ball-and-socket joint comprising a radially outwardly extending flange portion of a metal ring extending into the joint housing at a location near an equator of a joint ball of a joint pin;

regarding claims 18 and 23, the prior art of record does not disclose or suggest a ball-and-socket joint comprising a ring groove on a joint housing located radially outwardly of a cylindrical portion of the ring; the British patent 1,067,426 teaches a groove located radially outwardly of a cylindrical portion but there's no reason to combine this feature with the joint housing of Graham et al. because the threaded stem 10a will not permit placement of a groove located radially outwardly of the cylindrical portion of the housing;

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regarding claim 24, the prior art of record does not disclose or suggest a ball-and-socket joint comprising a metal ring having a radially outwardly angled flange that is extrusion-coated with material of a joint housing;

regarding claim 25, the arguments presented on 1/5/04 are persuasive; Pazdirek et al. '689 teaches that plastic is required on both sides of the metal ring at a cylindrical portion; and,

regarding claim 13, this claim depends from claim 24.

Response to Arguments

Applicant's arguments filed October 6, 2004 have been fully considered but they are not persuasive.

Applicant has argued that neither Graham et al. nor Pazdirek et al. teach a metal ring that secures a bearing shell within a plastic joint housing by the metal ring having plastic of the joint housing on only one side of a cylindrical center portion of the metal ring. This argument is not persuasive because the language does not appear in rejected claim 11. Applicant is reminded that the features upon which applicant relies (i.e., the metal ring having plastic of the joint housing on only one side of a cylindrical center portion of the metal ring) are not recited in the rejected claim 11. Although the claims are interpreted in light of the specification, limitations from the specification are

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not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In respect to the argument that the references do not teach the radially outwardly angled flange embedded in the plastic joint housing is also not persuasive as the outwardly angled flange is embedded in the housing. Again, the examiner has taken the broadest interpretation of the term "embedded" as previously discussed and defined. By definition, the term embedded means to surround closely or to be fixed firmly in a surrounding mass. In this instance, the surrounding mass is the housing. It is clear from the figures that the ring is fixed firmly. Applicant is reminded that claims in a pending application should be given their broadest reasonable interpretation. In *re* Pearson, 181 USPQ 641 (CCPA 1974).

Applicant has remarked that less plastic may be required for forming the joint housing of claim 11 than is required for forming the joint housing of Pazdirek et al. in which plastic flows through holes 30 in the ball cap and the plastic is located on both sides of the ball cap. In response, applicant has argued a relative term that does not appear on the claim. The claim does not recite "a plastic joint housing having less material than the plastic joint housing of Pazdirek et al." Furthermore, making a housing from plastic is the only teaching Pazdirek et al. is used to modify the primary reference to Graham et al. The Office has not considered or suggested making the exact housing

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of Pazdirek et al., but rather suggested making an obvious modification to the housing of Graham et al. by making the housing of plastic.

Furthermore, applicant has argued, in the center of page 11, neither Graham et al. nor Pazdirek et al. teach or suggest such structure. In response, it is not clear what structure the applicant refers to. Applicant might be referring to the functional statement at the beginning of the paragraph in which case, Graham et al. anticipate the structure of the ring (see rejection above) and inherently the functional recitations argued. The argument that the ring is embedded in the joint housing to act in a certain fashion is inherently anticipated by the primary reference. Thus, embedment of the radially outwardly angled flange acts to fix the ring in the plastic joint housing so that the metal ring may act to secure the bearing shell.

Applicant further argued that there is no suggestion or motivation for forming the joint housing of Graham et al., from plastic. In response to applicant's argument, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). Plastic housings, metal housings, or composite housings for ball-and-socket joints are known in the art. One skilled in the art would have made the housing from any known

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material, especially from plastic as known. Applicant further argued that Graham et al. teach providing a wear-free housing. Applicant is reminded that col. 1, line 55- col. 2, line 2 is to reference a comparison between joint housings of two types. Housings that don't have a bearing shell and those housings that have a bearing shell. Structurally, the housing of Graham et al. has a bearing shell, thus the housing is wear-free and the housing outlasts the bearing shells. The alternative will be that the ball of a ball pivot will be in contact with the housing thus wearing out the housing. In any event, since the housing of Graham et al. is not subject to wear because of the bearing shell, there is no destruction of the reference. Thus, making the housing from plastic, a less expensive material, will be an additional motivation in modifying Graham et al. alternative to the one provided in the rejection above.

Applicant further argued that Pazdirek et al. teaches the plastic insert molded around the major components of the ball joint including the ball, the ball cap, and the strengthening element. Applicant is reminded that this argument is out of scope as the claims are directed to a joint and not a method of making a joint including molding the housing a certain way. Applicant concludes that neither Graham et al. nor Pazdirek et al. teach or suggest a plastic joint housing that is adapted to receive replaceable insert units. This is not persuasive as Graham et al. suggest replacing the bearing shell repeatedly (see col. 1, line 54 - col. 2, line 2). Thus, Graham et al. in combination with Pazdirek teach a ball-and-socket joint with a joint housing made of plastic.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ernesto Garcia whose telephone number is 703-308-8606. The examiner can normally be reached from 9:30-6:00. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9326 for regular communications and 703-872-9327 for After Final communications.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on 703-308-2686. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



E.G.

November 1, 2004

Attachment: one marked-up copy of Graham et al., 2,424,455.



DANIEL P. STODOLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600

Best Available Copy